

Appl. No. 10/604,717
Amdt. dated January 19, 2006
Reply to Office action of October 05, 2005

REMARKS/ARGUMENTS

1. Rejection of claims 1-5 and 10-15 under 35 U.S.C. 103(a):

Claim 1 has been amended to overcome this rejection. Claim 1 now recites that a metal diffusion film is installed above the plurality of lamps for diffusing light generated by the lamps and for dissipating heat from the direct-type backlight unit. No new matter has been added through this amendment to claim 1.

Not only does the use of a metal diffusion film allow the diffusion film to have a thinner dimension than the use of traditional polymer materials, but the metal diffusion film also conducts accumulated heat away from the direct-type backlight unit.

None of the cited prior art references teach the use of a metal diffusion film, and do not teach that a metal diffusion film is used to help dissipate heat from a backlight unit. In light of these differences, the applicants submit that the amended claim 1 is patentably distinguished from the cited prior art.

Hillstrom fails to teach or suggest a metal diffusion film to arrive the subject matter of claim 1. In col. 11, lines 65-67, Hillstrom teaches that "Diffuser members 576 are positioned in between the point light sources and the backlit displays in order to spread out the illumination evenly on the display," while in col. 12 lines 1-4, Hillstrom teaches that "[t]he diffuser members preferably have a plurality of patterned openings or spaces, the openings being spaced to even out the light distribution." Hillstrom adds that the diffuser member 576 has a plurality of patterned openings or spaces in a preferable case, which is obviously not essential to the functionality of the diffuser member 576. Accordingly, the diffuser member 576 taught by Hillstrom is inherently made of materials that are pervious to light (e.g., non-metal).

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If the diffuser member 567 were made of metal, it would block light emitted from the point light source and therefore Hillstrom's principle of operation would be changed. According to MPEP 2143.01, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie obvious*.
In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)."

Hillstrom teaches that the diffuser member 576 is applied to a single point light source 572 (FIG 19B and col. 11, lines 65-67). However, Hillstrom does not teach or suggest the diffusion film is metal and is disposed above a plurality of lamps to diffuse light of the plural lamps and to conduct accumulated heat away from direct-type backlight unit, as required by the amended claim 1. There is no suggestion or motivation to combine the backlight device taught by Moon et al. with the diffuser member taught by Hillstrom.

Claims 2-5 and 10-15 are dependent on claim 1, and should be allowed if claim 1 is allowed. Reconsideration of claims 1-5 and 10-15 is respectfully requested.

20 2. Rejection of claims 6-9 and 16-20 under 35 U.S.C. 103(a):

The applicants would like to point out how claim 16 is patentable over the combination of Moon et al., Hillstrom, and Woo. Woo shows in Fig.3 and explains in column 3, lines 14-16, that a cooling portion 21 of the thermoelectric element 20 is in contact with the rear surface of the display device 10. However, Woo's display device 10 of the projector is not analogous to the claimed diffusion film in the backlight unit. Therefore, the prior art fails to teach a heat-dissipating piece directly connected to the diffusion film, as is recited in claim 16.

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Regarding claim 6, the prior art also fails to teach that a heat-dissipating piece is connected to a periphery of the diffusion film, as is recited in the currently amended claim 6. The heat-dissipating piece connected to the periphery of the diffusion film facilitates 5 the removal of heat from the backlight unit through the diffusion film. Since none of the cited prior art references teach the connection of a heat-dissipating piece to a diffusion film, claims 6 and 16 are both patentable over the cited prior art.

Claims 7-9 and 17-20 are respectively dependent on claims 6 and 16, and should be 10 allowed if claims 6 and 16 are allowed. Reconsideration of claims 6-9 and 16-20 is respectfully requested.

3. Introduction to new claim 21:

15 New claim 21 is drafted to specify that the diffusion film of the direct-type backlight unit of claim 16 is made of metal. No new matter is added through claim 21. Acceptance of the new claims 21 is requested.

4. Interview Summary:

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A telephone interview was conducted between US Patent Agent Scott Margo (Reg. # 56,277) and Examiner Richard Kim on December 14th, 2005. Claims 1 and 16 were discussed.

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Regarding claim 1, Mr. Margo mentioned that none of the cited prior art taught a metal diffusion film, and that the use of metal for the material of the diffusion film was not obvious since it allowed the diffusion film to become smaller and to conduct heat better than the traditional diffusion films. The examiner stated that it appeared that the

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cited prior art did not appear to teach a metal diffusion film, but the metal diffusion film merely substitutes metal for the material used in a conventional diffusion film.

Regarding claim 16, Mr. Margo pointed out that none of the cited prior art references 5 teach "a heat-dissipating piece directly connected to the diffusion film". The examiner said that he would need more time to closely consider this claimed limitation, and encouraged this argument to be filed in a written response. No agreement was reached on any of the claims.

10 In view of the above statements in favor of patentability, the applicants respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

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Date: 01/19/2006

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Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)